

What is claimed is:

1. A method for managing at least one resource in a data network, said data network including first and second sides in communication with each other, said first side including at least an Internet Protocol Network and said second side including at least one cell, said method comprising:
  - 5 receiving data corresponding to at least one measurement of said at least one resource at each of said first and second sides;
  - analyzing said data corresponding to said at least one measurement at each of said first and second sides; and
- 10 controlling said at least one resource to said at least one cell, from said first side of said network.
2. The method of claim 1, additionally comprising signaling at least one device on said first side of said network to monitor said network on said first side.
- 15 3. The method of claim 1, additionally comprising signaling at least one device on said second side of said network to monitor said network on said second side.
- 20 4. The method of claim 2, wherein said at least one device on said first side includes a traffic shaper.
5. The method of claim 3, wherein said at least one device on said second side includes a measuring device.
- 25 6. The method of claim 5, wherein said measuring device includes at least one queuing device.

7. The method of claim 1, wherein said at least one measurement at said first side is in terms of source rate and said at least one measurement at said second side is in terms of cellular rate.

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8. The method of claim 7, wherein said analyzing includes correlating said measurements into an estimate of the cellular rate in terms of source rate.

9. The method of claim 8, wherein said correlating includes determining  
10 transformation parameters and applying said transformation parameters to said measurements to represent said cellular rate on said second side of said network in terms of said source rate on said first side of said network.

10. The method of claim 1, wherein said controlling said at least one resource to said  
15 at least one cell, from said first side of said network, includes signaling at least one device on said first side of said network to allocate said at least one resource on said first side of said network.

11. The method of claim 10, wherein said at least one device on said first side of said  
20 network includes a traffic shaper.

12. The method of claim 1, wherein said at least one resource includes bandwidth.

13. A method for managing at least one resource in a data network, said data network  
25 including first and second sides in communication with each other, said first side including at least an Internet Protocol Network and said second side including at least one cell, said method comprising:

obtaining at least one measurement of said at least one resource at each of said first and second sides;

analyzing said at least one measurement from each of said first and second sides; and

5           controlling said at least one resource to said at least one cell, from said first side of said network.

14. The method of claim 13, additionally comprising, monitoring said network on each of said respective first and second sides.

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15. The method of claim 13, wherein said at least one measurement at said first side is in terms of source rate and said at least one measurement at said second side is in terms of cellular rate.

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16. The method of claim 15, wherein said analyzing includes correlating said measurements into an estimate of the cellular rate in terms of source rate.

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17. The method of claim 16, wherein said correlating includes determining transformation parameters and applying said transformation parameters to said measurements to represent said cellular rate on said second side of said network in terms of said source rate on said first side of said network.

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18. The method of claim 13, wherein said controlling said at least one resource to said at least one cell, from said first side of said network, includes allocating said at least one resource on said first side of said network.

19. The method of claim 13, wherein said at least one resource includes bandwidth.

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20. A method for estimating capacity of at least one cell comprising:
- a. monitoring traffic associated with said at least one cell through at least one queuing device, said queuing device including a queue;
  - 5 b. obtaining at least one measurement of the output rate from said queue;
  - c. obtaining at least one measurement of the amount of data in said queue; and
  - d. determining at least one capacity estimation as an output rate from 10 said queue, provided that said amount of data is within predetermined limits.

15 21. The method of claim 20, wherein said steps (b) and (c) are performed contemporaneously.

22. The method of claim 21, wherein said steps (b) and (c) are performed simultaneously.

23. The method of claim 20, wherein said at least one capacity estimation includes a plurality of capacity estimations and additionally comprising, filtering said plurality 20 of capacity estimations.

25 24. An apparatus for managing at least one resource in a data network, said data network including first and second sides in communication with each other, said first side including at least an Internet Protocol Network and said second side including at least one cell, said apparatus comprising:

a storage device; and

a processor programmed to:

receive data corresponding to at least one measurement of said at least one resource at each of said first and second sides;

analyze said data corresponding to said at least one measurement at each of said first and second sides; and

5 control said at least one resource to said at least one cell, from said first side of said network.

25. The apparatus of claim 24, wherein said processor is additionally programmed to: signal at least one device on said first side of said network to monitor said network on 10 said first side.

26. The apparatus of claim 24, wherein said processor is additionally programmed to: signal at least one device on said second side of said network to monitor said network on said second side.

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27. The apparatus of claim 24, wherein said processor is additionally programmed to: utilize said at least one measurement at said first side in terms of source rate and said at least one measurement at said second side in terms of cellular rate.

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28. The apparatus of claim 27, wherein said processor is additionally programmed to: analyze said data by at least correlating said measurements into an estimate of the cellular rate in terms of source rate.

25 29. The apparatus of claim 28, wherein said correlating includes determining transformation parameters and applying said transformation parameters to said

measurements to represent said cellular rate on said second side of said network in terms of said source rate on said first side of said network.

30. The apparatus of claim 24, wherein said processor is additionally programmed to:  
5 control said at least one resource to said at least one cell, from said first side of said network by steps including, signaling at least one device on said first side of said network to allocate said at least one resource on said first side of said network.

31. The apparatus of claim 30, wherein said at least one device on said first side of  
10 said network includes a traffic shaper.

32. The apparatus of claim 24, wherein said at least one resource includes bandwidth.

33. A programmable storage device readable by a machine, tangibly embodying a  
15 program of instructions executable by a machine to perform method steps for managing at least one resource in a data network, said data network including first and second sides in communication with each other, said first side including at least an Internet Protocol Network and said second side including at least one cell, said method steps selectively executed during the time when said program of instructions  
20 is executed on said machine, comprising:

receiving data corresponding to at least one measurement of said at least one resource at each of said first and second sides;

analyzing said data corresponding to said at least one measurement at each of said first and second sides; and

25 controlling said at least one resource to said at least one cell, from said first side of said network.

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34. An apparatus for estimating capacity of at least one cell comprising:  
a storage device; and  
a processor programmed to:  
a. monitor traffic associated with said at least one cell through at least  
5 one queuing device, said queuing device including a queue;  
b. obtain at least one measurement of the output rate from said queue;  
c. obtain at least one measurement of the amount of data in said  
queue; and  
d. determine at least one capacity estimation as an output rate from  
10 said queue, provided that said amount of data is within  
predetermined limits.
35. The apparatus of claim 34, wherein said processor is additionally programmed to  
perform said steps (b) and (c) contemporaneously.
- 15 36. The apparatus of claim 35, wherein said processor is additionally programmed to  
perform said steps (b) and (c) simultaneously.
- 20 37. A programmable storage device readable by a machine, tangibly embodying a  
program of instructions executable by a machine to perform method steps for  
estimating capacity of at least one cell, said method steps selectively executed during  
the time when said program of instructions is executed on said machine, comprising:  
monitoring traffic associated with said at least one cell through at least  
one queuing device, said queuing device including a queue;  
obtaining at least one measurement of the output rate from said queue;  
25 obtaining at least one measurement of the amount of data in said  
queue; and

determining at least one capacity estimation as an output rate from said queue, provided that said amount of data is within predetermined limits.

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